

FIG. 2A

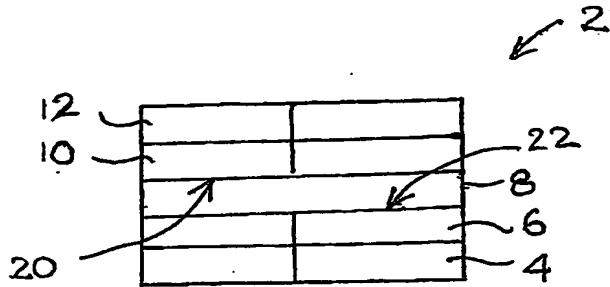
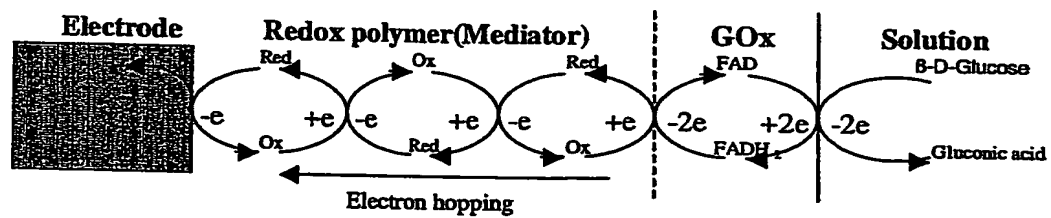
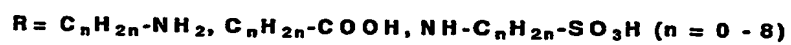
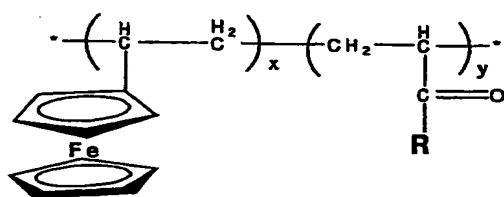


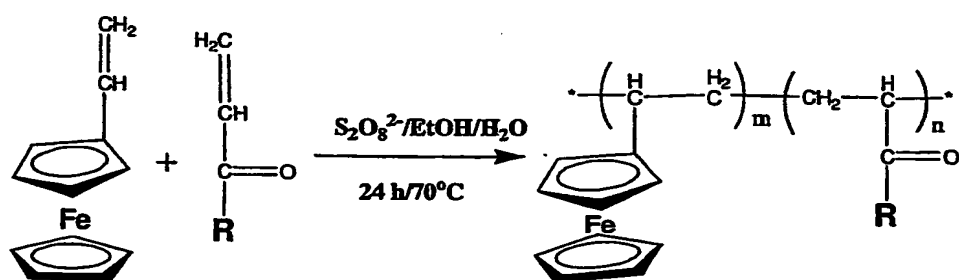
FIG. 2B



**Figure 4.** Illustration of redox polymer mediated biosensing process.



**Figure 5.** Structure of water-soluble and cross-linkable ferrocenyl redox polymer.



$\text{R} = \text{C}_n\text{H}_{2n}\text{-NH}_2, \text{C}_n\text{H}_{2n}\text{-COOH}, \text{NH-C}_n\text{H}_{2n}\text{-SO}_3\text{H} \text{ (} n = 0 - 8 \text{)}$

Figure 6. Polymerization mechanism of the redox polymer

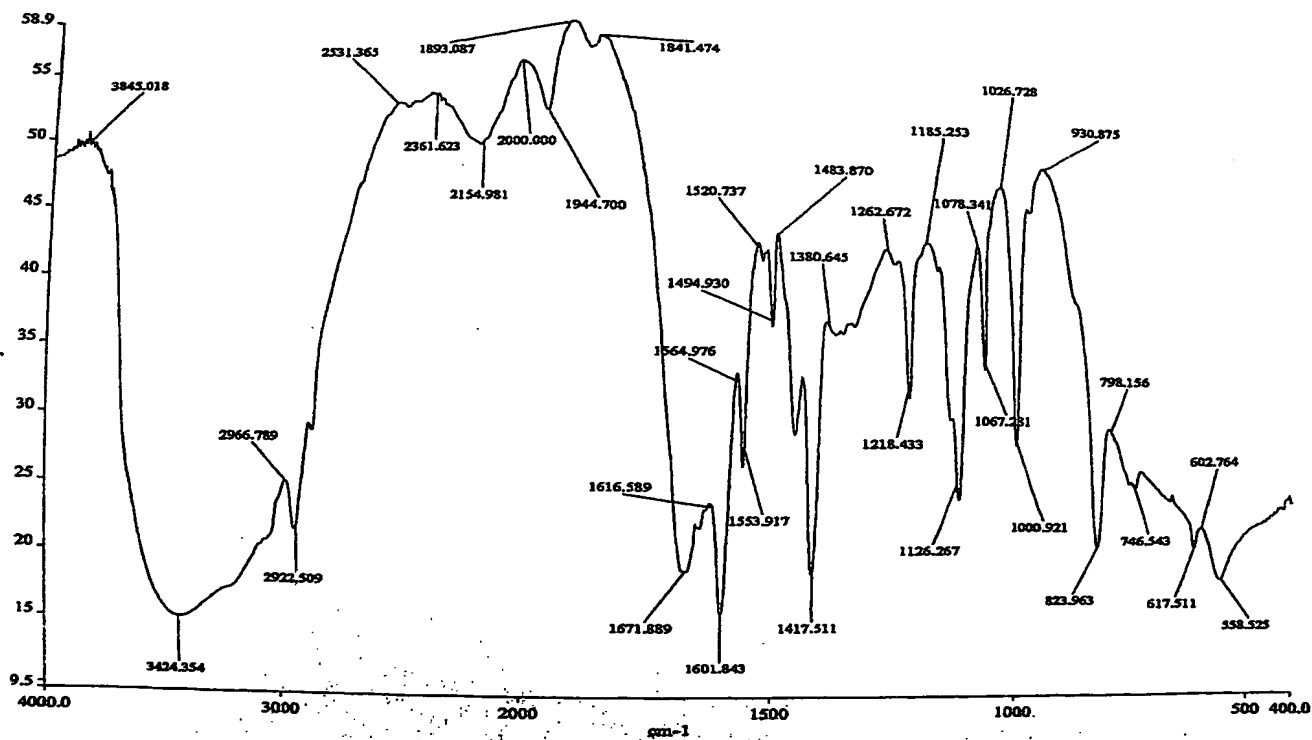


FIGURE 7. FT-IR Spectrum of PAA-VFc and PAAS-VFc redox polymer

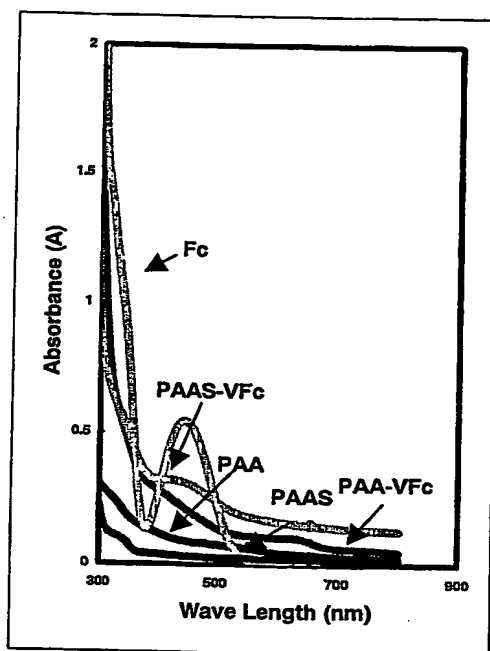


FIGURE 8. UV-visible spectra of Fc, PAA PAAS and their VFc copolymers.

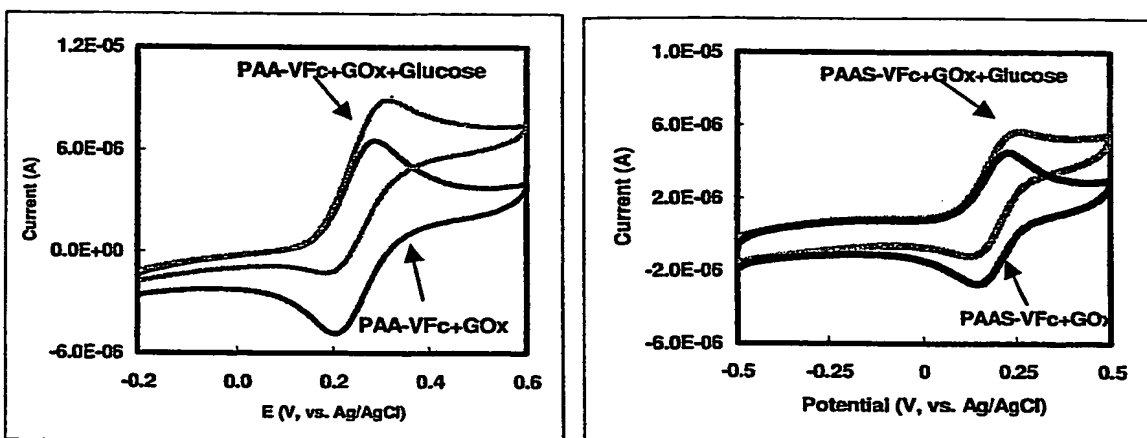
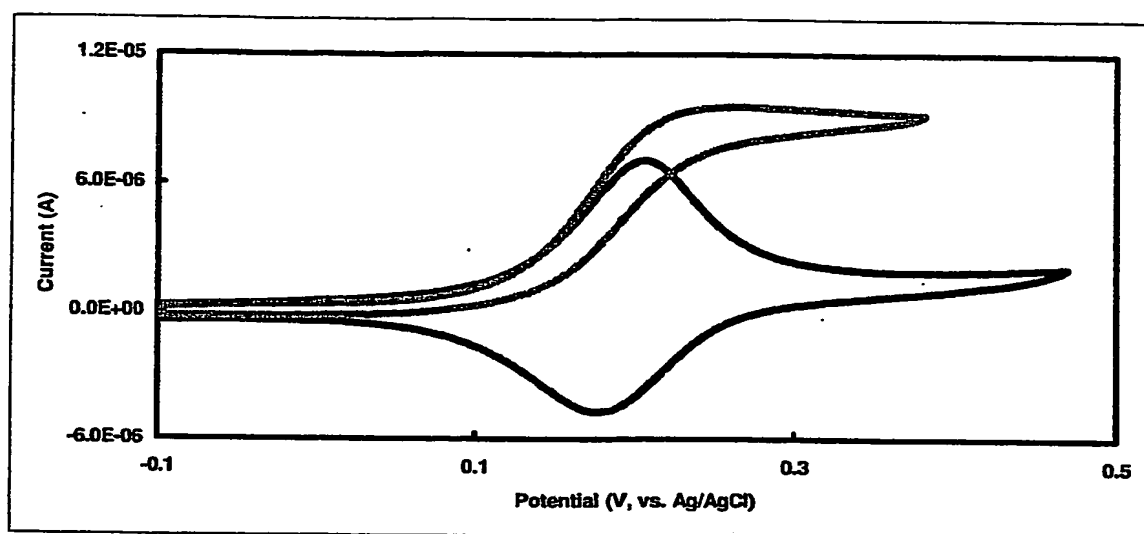


Figure 9. Cyclic voltammograms of redox polymers in various systems.

Phosphate-buffered saline, potential scan rate = 100 mV/s



**Figure 10.** Cyclic voltammogram of cross-linked PAA-VFc-GOx-BSA film on gold electrode.  
PBS, potential scan rate 50 mV/s.



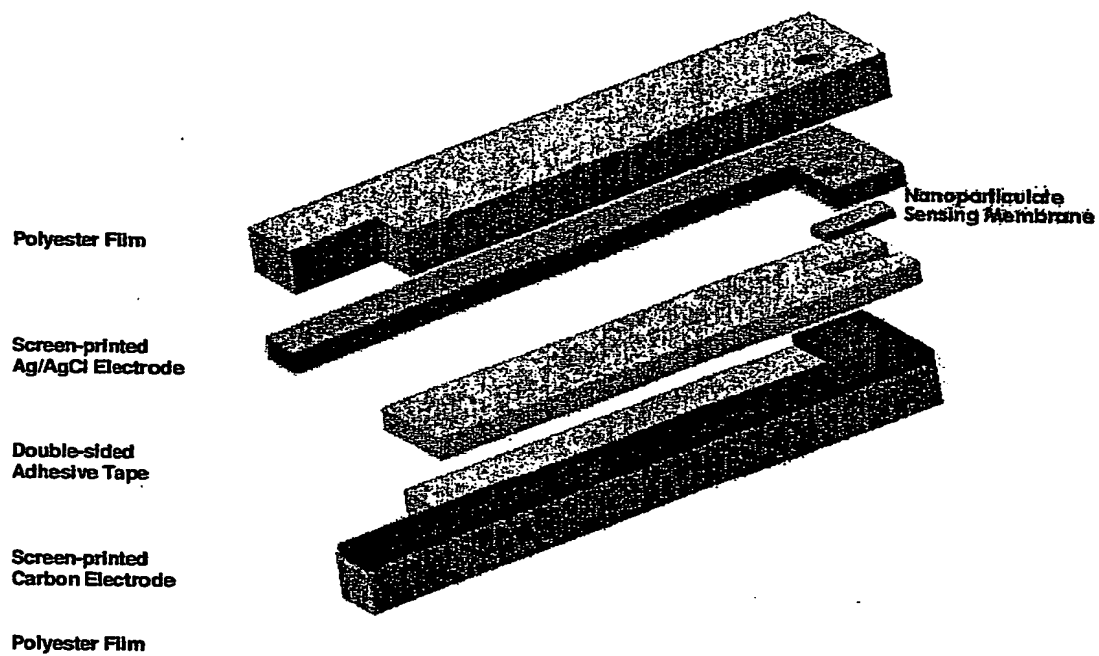


Figure 11

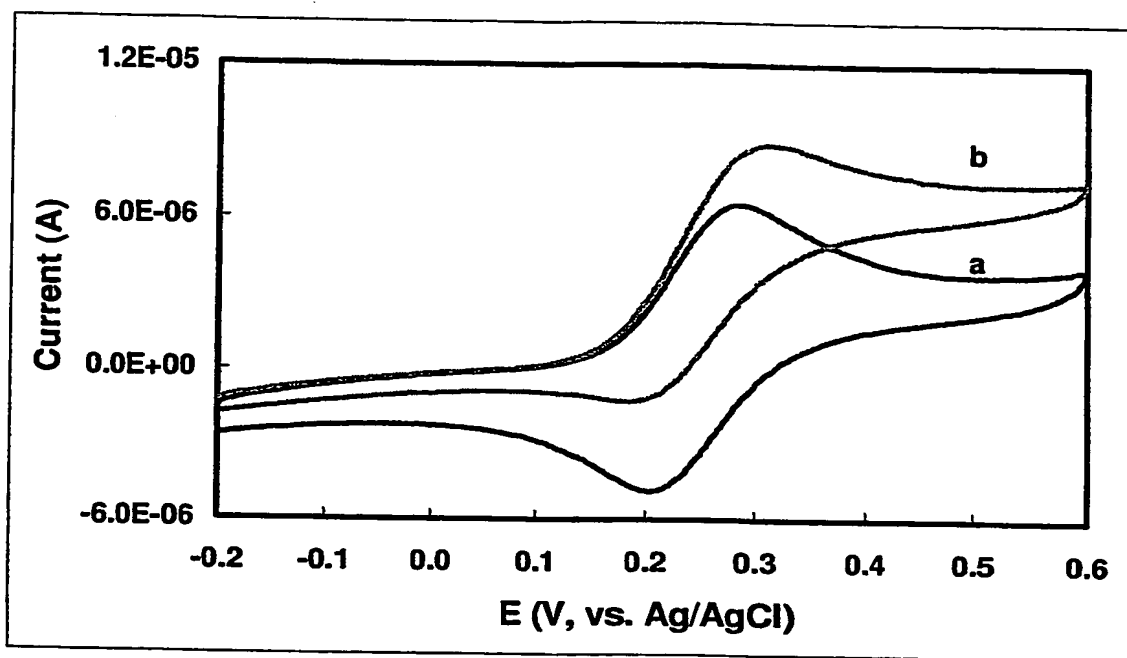


Figure 12

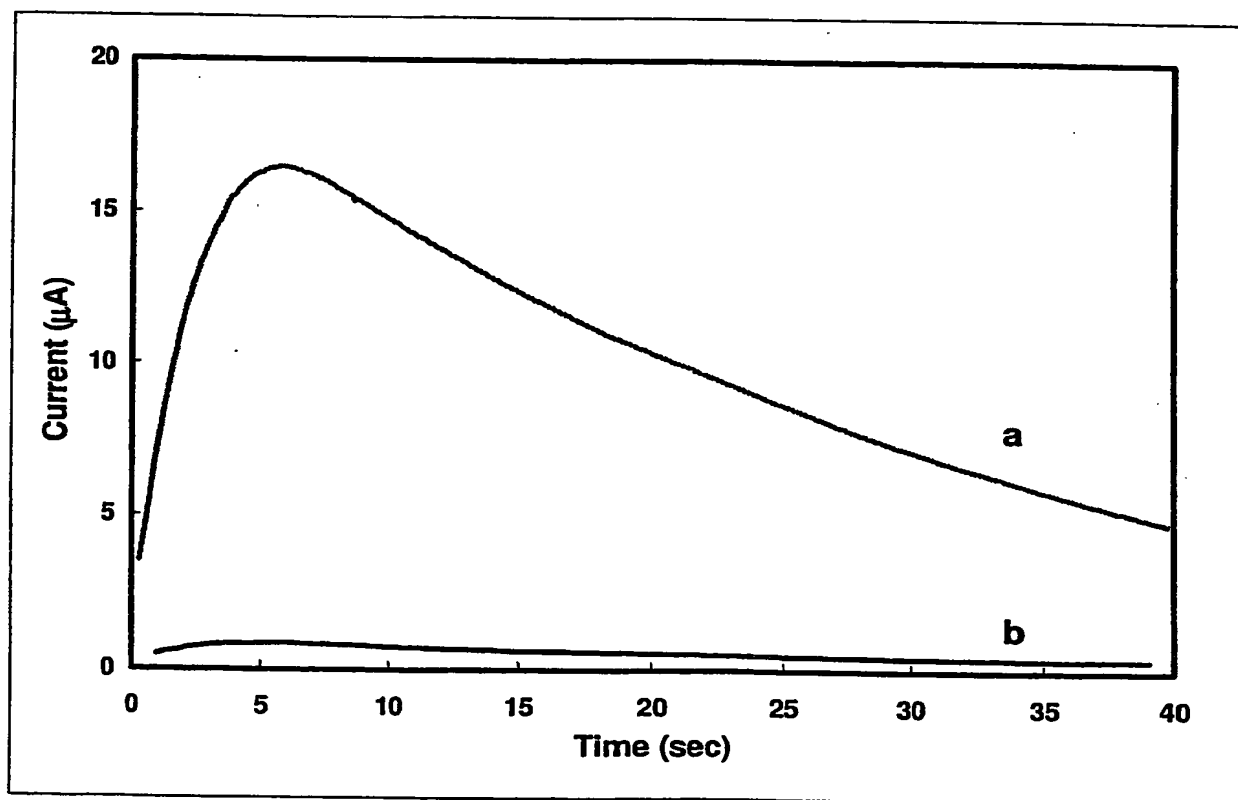


Figure 13

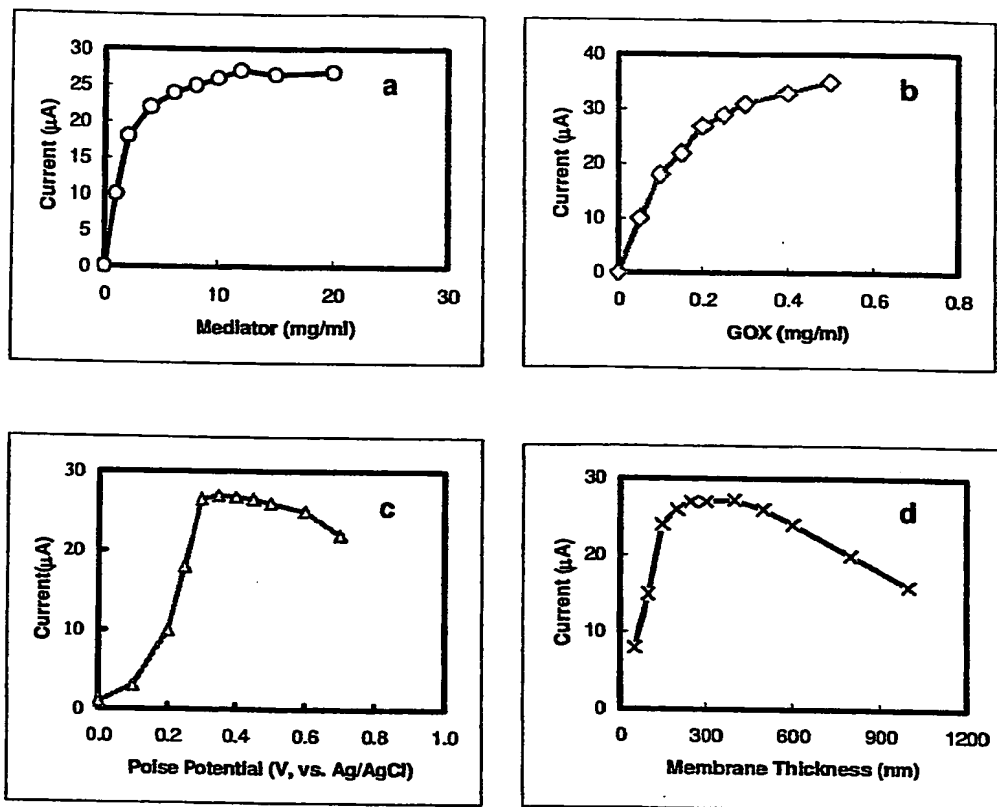


Figure 14

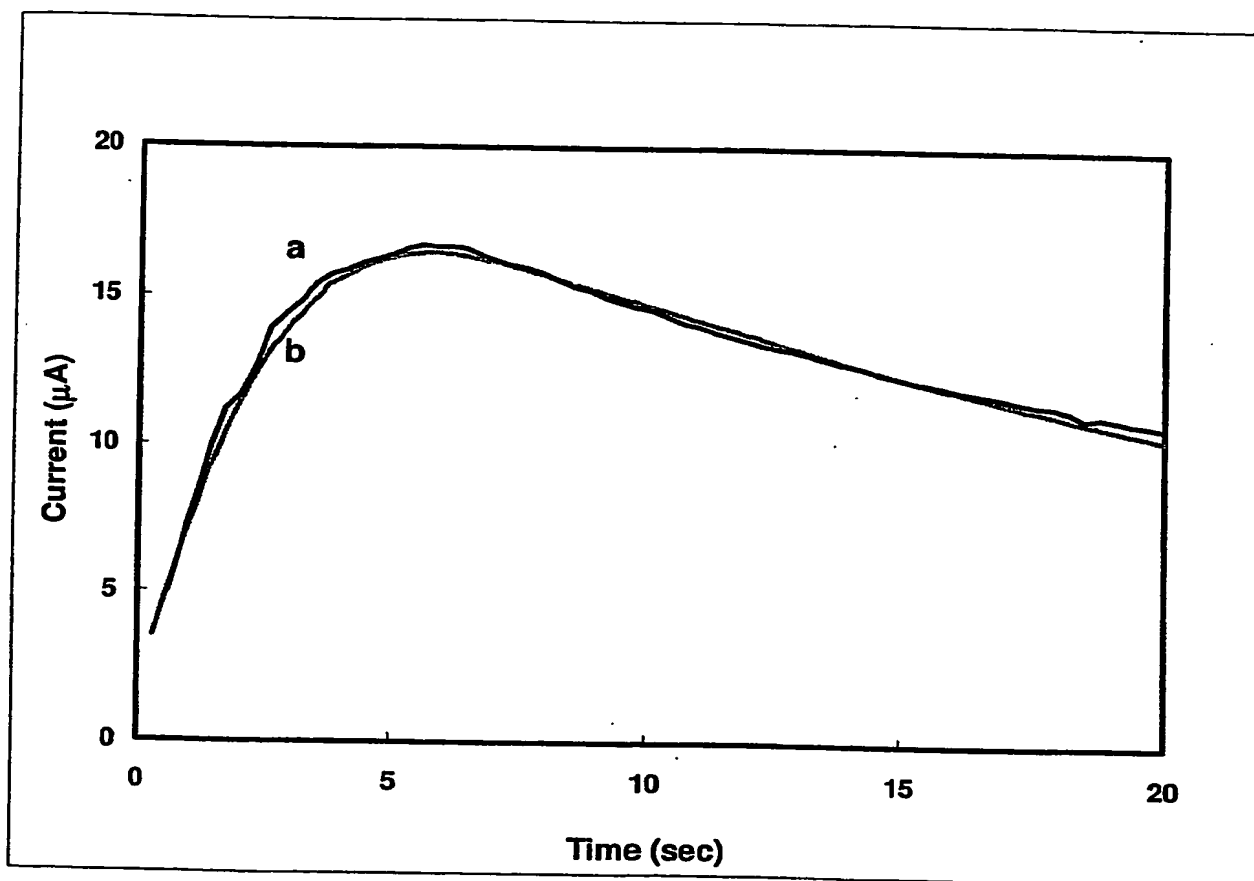


Figure 15

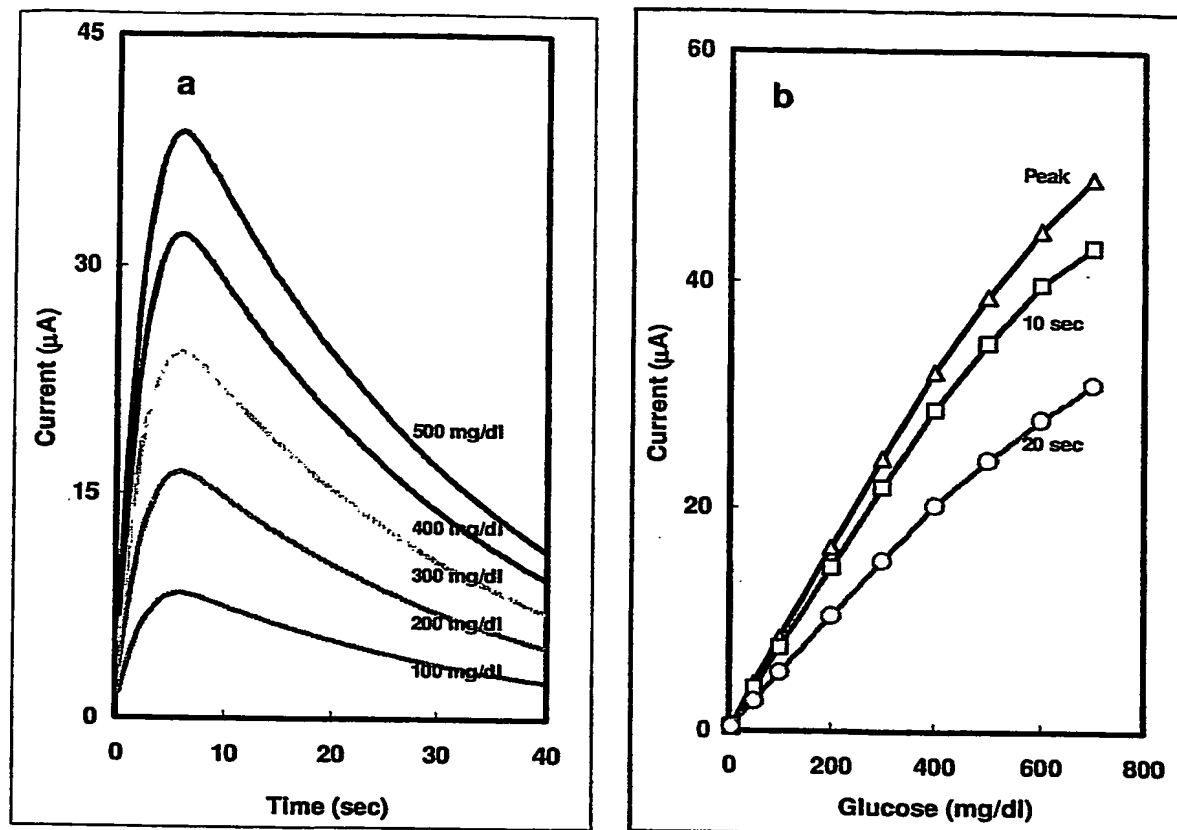


Figure 16